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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,722	02/14/2001	Dah-Lain Almon Tang	CE08292R	2622

22917 7590 06/24/2005

MOTOROLA, INC.
1303 EAST ALGONQUIN ROAD
IL01/3RD
SCHAUMBURG, IL 60196

EXAMINER

BAYARD, DJENANE M

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,722

Applicant(s)

TANG ET AL.

Examiner

Djenane M. Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This is in response to amendment filed on 3/28/05 in which claims 1-2, 4-25 are pending.

Response to argument

2. Applicant's arguments with respect to claims 1 and 18 have been considered but are moot in view of the new ground(s) of rejection.

3. As per claim 9, Applicant's arguments have been fully considered but they are not persuasive. Chuah clearly teaches a packet transport method device utilizing header removal fields. Furthermore, Chuah clearly teaches a multi-protocol label switching networks incorporating a plurality of label switching routers. A label switching router is a router operable to forward IP packets conventionally via layer three forwarding, and additionally, is operable to perform layer two switching if a switching label is appended to the IP packets. All IP packets have a label appended. The label is used to define a layer two switched packet flow through one or more label switching routers (See col. 1, lines 445-67).

4. As per claims 23-25, Applicant's argument have been fully considered but they are not persuasive. Tappan clearly teaches the label-forwarding information will include a replacement data structure. The replacement data structure includes the link-layer header 58 as well as a shim header. Note that the prefix- and label-based tables can actually be a single table indexed by label but also including the prefix as another key. Also, there can be variations from the most typical arrangement, in which the forwarding-table entry's label-forwarding-

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information field includes a pointer to a data structure. The router employs data structure 62's contents to replace the part of the incoming packet's structure that includes the link-layer header and top shim-header stack entry, if any. In this case, the part 63 of the incoming, packet to be replaced consists only of the link-layer header: there is no top shim-header stack entry. The label handling involves the label-replacement and stack-push operations rather than the shim-header imposition that had to be performed in response to the (unlabeled) packet from router CE2. But FIG. 7B shows that the router can use the same forwarding information for the labeled packet as it did for the unlabeled packet: the replacement structure 62 is the same (See col. 6, lines 5-60).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,374,303 to Armitage et al in view of U.S. Patent No. 6,512,766 to Wilford.

a. As per claims 1 and 18, Armitage et al teaches a method for multiplexing data packets comprising steps of: receiving a plurality of data packets to produce a plurality of received data packets, wherein each received data packet of the plurality of received data packets comprises a routing address (See col. 2, lines 34-62) determining an address label for each received data packet based on the data packet's routing address; (See col. 3, lines 7- 37). Furthermore,

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Armitage et al teaches adding the address label determined for each received data packet to the data packet to produce a modified data packet and multiplexing the modified data packets (See col. 3, lines 40-67 and col. 4, lines 1-20). However, Armitage et al fails to teach wrapping the multiplexed data packets with a new data transmission header comprising routing information for the multiplexed data packets to produce a data transmission unit.

Wilford teaches an enhanced Internet packet routing lookup. Furthermore, Wilford teaches wherein the packet is encapsulated using an MPLS protocol, the packet header includes a set of line information, a destination address, a source address, a fixed code indicating that the packet is encapsulated using MPLS and an MPLS label (See col. 3, lines 36-44).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wrapping the multiplexed data packets with a new data transmission header comprising routing information for the multiplexed data packets to produce a data transmission unit as taught by Wilford in the claimed invention of Armitage et al in order to provide a method that performs routing lookup, which is responsive both to the header information associated with a packet and to the length of that header information, and which is makes use of all useful information including an input interface from which the packet was received (See col. 2, lines 15-25).

7. Claims 2, 4-6, 8, 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,374303 to Armitage et al in view of U.S. Patent No. 6,512766 to Wilford as applied to claim 1 above, and further in view of U.S. Patent No. 6,735190 to Chuah et al.

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a. As per claims 2 and 19, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach deleting each received data packet's routing address from the data packet.

Chuah et al teaches deleting each received data packet's routing address from the data packet (See col. 2, lines 38-39)

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate deleting each received data packet's routing address from the data packet as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to reduce overhead (See col. 2, lines 26-27).

b. As per claim 4, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach wherein the data transmission header comprises a transport layer header.

Chuah et al teaches wherein the data transmission header comprises a transport layer header (See col. 1, lines 27-38)

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the data transmission header comprises a transport layer header as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to improve the capacity of the router (See col. 1, lines 45-46).

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c. As per claim 5, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach wherein the data transmission header comprises a multi-protocol address label switching (MPLS) header.

Chuah et al teaches wherein the data transmission header comprises a multi-protocol address label switching (MPLS) header (See col. 6, lines 56-57)

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the data transmission header comprises a multi-protocol address label switching (MPLS) header as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to convert the network layer packet into labeled packet (See col. 6, lines 57-58).

d. As per claim 6, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in in view of Wilford fails to teach routing the multiplexed data packets based on the added data transmission header.

Chuah et al teaches routing the multiplexed data packets based on the added data transmission header (See col. 2, lines 46-49).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate routing the multiplexed data packets based on the added data transmission header as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to convert the network layer packet into labeled packet (See col. 6, lines 57-58).

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e. As per claims 8 and 21, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach creating a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address.

Chuah et al teaches creating a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address (See col. 10, lines 1-30)

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate creating a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to establish a labeled flow (See abstract).

f. As per claim 20, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach wherein the processor further determines a data transmission header for the multiplexed data packets and adds the data transmission header to the multiplexed data packets.

Chuah et al teaches wherein the processor further determines a data transmission header for the multiplexed data packets and adds the data transmission header to the multiplexed data packets (See col. 2, lines 39-45).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the processor further determines a data transmission header for

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the multiplexed data packets and adds the data transmission header to the multiplexed data packets as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to establish a labeled flow (See abstract).

g. As per claim 22, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach wherein the connection table is created by the data transmitting device and conveyed by the data transmitting device to the data receiving device.

Chuah et al teaches wherein the connection table is created by the data transmitting device and conveyed by the data transmitting device to the data receiving device (See col. 10, lines 5-30).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the connection table is created by the data transmitting device and conveyed by the data transmitting device to the data receiving device as taught by Chuah et al in the claimed invention of Armitage et al in view of Wilford in order to establish a labeled flow (See abstract).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,374,303 to Armitage et al in view of U.S. Patent No. 6,512,766 to Wilford as applied to claim 1 above, and further in view of U.S. Patent No. 5,991,300 to Tappan.

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a. As per claim 7, Armitage et al in view of Wilford et al teaches the claimed invention as described above. However, Armitage et al in view of Wilford fails to teach wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets.

Tappan et al teaches wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets (See col. 1, lines 50-53)

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets as taught by Tappan et al in the claimed invention of Armitage et al in view of Wilford in order to determine how to forward the datagram to its ultimate destination (See col. 1, lines 56-58).

9. Claims 9-11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,735,190 to Chuah et al in view of U.S. Patent No. 6,243,373 to Veerina et al.

a. As per claim 9, Chuah et al teaches a method for point-to-point transmission of data comprising steps of: receiving, by a data transmitting device, a plurality of data packets to produce a plurality of received data packets, wherein each received data packet of the plurality of received data packets comprises a routing address (See col. 4, lines 25-30, Remarks: the network

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is comprised of routers); determining, by the data transmitting device, a address label for each received data packet based on the data packet's routing address (See col. 1, lines 45-47); adding, by the data transmitting device, the address label determined for each received data packet to the data packet to produce a modified data packet (See col. 2, lines 39-45); adding, by the data transmitting device, a data transmission header to the multiplexed data packets that includes routing information for the multiplexed data packets to produce a data transmission unit (See col. 5, lines 23-40); and transmitting, by the data transmitting device, the data transmission unit to a data receiving device (See col. 2, lines 19-21). However, Chuah et al fails to teach multiplexing the modified data packets.

Veerina et al teaches a connection and packet level multiplexing between network links. Furthermore, Veerina et al teaches a connection and packet level multiplexing between network links (See col. 2, lines 10-20).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate a connection and packet level multiplexing between network links as taught by Veerina et al in the claimed invention of Chuah et al in order to connect multiple links between networked computer (See col. 1, lines 6-9).

b. As per claim 10, Chuah et al teaches deleting, by the data transmitting device, each received data packet's destination address from the data packet (See col. 2, lines 38-39).

c. As per claim 11, Chuah et al teaches receiving the data transmission unit by the data receiving device; extracting, by the data receiving device, the modified data packets from the

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data transmission unit; and routing, by the data receiving device, each modified data packet based on the routing address corresponding to the data packet's address label (See col. 2, lines 39-45).

d. As per claim 13, Chuah et al teaches a step of creating a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address (See col. 10, lines 1-30).

e. As per claims 14, Chuah et al teaches wherein the connection table is created by the data transmitting device and conveyed by the data transmitting device to the data receiving device (See col. 10, lines 5-30)

f. As per claim 15, Chuah et al teaches routing each modified data packet comprises a step of routing, by the data receiving device, each modified data packet by reference to the connection table (See col. 10, lines 1-30)

10. Claims 12, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,735,190 to Chuah et al in view of U.S. Patent No. 6,243,373 to Veerina et al. as applied to claim 9 above, and further in view of U.S. Patent No. 5,991,300 to Tappan

a. As per claim 12, Chuah et al teaches deleting, by the data receiving device, the address label from each modified data packet. However, Chuah et al fails to teach adding, by the data

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receiving device to each modified data packet, the routing address corresponding to the modified data packet's address label.

Tappan teaches adding, by the data receiving device to each modified data packet, the routing address corresponding to the modified data packet's address label (See col. 7, lines 1-25).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate adding, by the data receiving device to each modified data packet, the routing address corresponding to the modified data packet's address label as taught by Tappan et al in the claimed invention of Chuah et al in view of Veerina et al in order to relieve the router of the need to perform an expensive long match-search (See col. 2, lines 45-46)

b. As per claim 16, Chuah et al in view of Veerina et al teaches the claimed invention as described above. However, Chuah et al in view of Veerina fails to teach wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets.

Tappan et al teaches wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets (See col. 1, lines 50-53)

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets as taught by Tappan et al in the claimed invention of

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Chuah et al in view of Veerina in order to determine how to forward the datagram to its ultimate destination (See col. 1, lines 56-58).

c. As per claim 17, Chuah et al in view of Veerina et al teaches the claimed invention as described above. However, Chuah et al in view of Veerina fails to teach receiving a data transmission unit; determining a routing address of each modified data packet included in the data transmission unit based on the modified data packet's address label; and forwarding each modified data packet based on the determined routing address.

Tappan teaches receiving a data transmission unit; determining a routing address of each modified data packet included in the data transmission unit based on the modified data packet's address label; and forwarding each modified data packet based on the determined routing address (See col. 7, lines 1-25).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate receiving a data transmission unit; determining a routing address of each modified data packet included in the data transmission unit based on the modified data packet's address label; and forwarding each modified data packet based on the determined routing address as taught by Tappan et al in the claimed invention of Chuah et al in view of Veerina et al in order to relieve the router of the need to perform an expensive long match-search (See col. 2, lines 45-46)

11. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,991,300 to Tappan in view of U.S. Patent No. 6,243,379 to Veerina et al.

a. As per claim 23, Tappan teaches a data receiving device for receiving a data transmission unit comprising a plurality of multiplexed data packets (See col. 6, lines 25-33), the data receiving device comprising: a receiving unit that receives the data transmission unit based on a data transmission header that wraps the multiplexed data packets, wherein each data packet of the multiplexed data packets comprises an address label; and a processor coupled to the receiving unit that extracts a plurality of data packets from the data transmission unit, determines a routing address for each data packet of the plurality of data packets based on the address label, and routes each data packet based on the data packet's determined routing address (See col. 7, lines 1-25). However, Tappan et al fails to teach multiplexing the modified data packets.

Veerina et al teaches a connection and packet level multiplexing between network links (See col. 2, lines 10-20).

It would have been obvious to one with ordinary skill in the art at the time this invention was made to incorporate a connection and packet level multiplexing between network links as taught by Veerina et al in the claimed invention of Chuah et al in order to connect multiple links between networked computer (See col. 1, lines 6-9).

b. As per claim 24, Tappan teaches a memory coupled to the processor that stores a connection table comprising at least one address label and a routing address corresponding to the at least one address label, and wherein the processor determines a routing address for each data packet by reference to the connection table (See col. 2, lines 45-53).

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c. As per claim 25, Tappan teaches wherein the data transmission unit further comprises a data transmission header corresponding to the data receiving device (See col. 2, lines 47-48).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djenane M. Bayard whose telephone number is (571) 272-3878. The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Djenane Bayard

Patent Examiner


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER